

**Notice of Allowability**

Application No.

09/753,370

Examiner

Benjamin C. Lee

Applicant(s)

WOODARD ET AL.

Art Unit

2632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Examiner's Amendment.
2. ☒ The allowed claim(s) is/are 73-76 and 79-88; renumbered 1-14 by Examiner.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 10/27/05.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Dr. Woodard on 10/26/05.

The application has been amended as follows:

I) The Title has been changed to --Methods and Apparatus to Increase Sound Quality of Piezoelectric Devices--.

II) In the claims:

73. (Currently Amended) A device for producing mechanical vibrations in response to an electrical signal, comprising:

a piezoelectric component having two opposing surfaces, said piezoelectric component further having at least two points where polarity is recognized; [and] wherein the piezoelectric component has a T-shaped planform; and

further comprising a clamp connected at the neck region of the T-shaped planform of the piezoelectric component for coupling the piezoelectric component to a base in a cantilever fashion.

75. (Currently Amended) The device according to claim 73, wherein the piezoelectric component comprises a bimorph piezoelectric structure having piezoelectric material bonded to two different surfaces of a metallic support layer.

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Claims 77-78. (Canceled)

80. (Currently Amended) An acoustic member for amplifying sound, comprising:

a surrounding wall portion connected to two end portions, one of said [one] end [portion\ portions having an orifice to form a passageway [through the end portion] therethrough, the other of said [other] end [portion] portions is that of a mechanically excited vibrating surface to form an enclosed chamber [within the acoustic member] to amplify sound generated by the mechanically excited vibrating surface, wherein said mechanically excited vibrating surface extends beyond the area of said surrounding wall portion in such a way as to allow multiple of said enclosed chamber to be placed thereon said mechanically excited vibrating surface [when the bottom surface of the acoustic member is connected to the piezoelectric component].

86. (Currently Amended) A device for producing mechanical vibrations in response to an electrical signal, comprising:

a piezoelectric component having two opposing surfaces, said piezoelectric component further having at least two points here polarity is recognized; and wherein a dampening material substantially covers at least one surface of the piezoelectric device, said dampening material has low elastic modulus [similar to those of ] substantially of that selected from the group of material [consisting of] comprising polyolefin, synthetic polyolefin, 3M Scotch <sup>TM</sup> 468 MP High Performance Adhesive [or] and 3M Scotch <sup>TM</sup> 859 Removable Mounting Squares.

87. (Currently Amended) The device according to claim 73 wherein a dampening material substantially covers at least one surface of the piezoelectric device, said dampening material has low elastic modulus [similar to those of ] substantially of that selected from the

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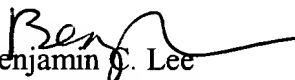
group of material [consisting of] comprising polyolefin, synthetic polyolefin, 3M Scotch <sup>TM</sup> 468 MP High Performance Adhesive [or] and 3M Scotch <sup>TM</sup> 859 Removable Mounting Squares.

88. (Currently Amended) The device of claim 87 where one or more acoustic members are operatively connected to the surface of the piezoelectric device.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (571) 272-2963. The examiner can normally be reached on Mon -Fri 11:00Am-7:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Benjamin C. Lee  
Primary Examiner  
Art Unit 2632

B.L.